

100 200 300 400 500 600 700 800 900 1000

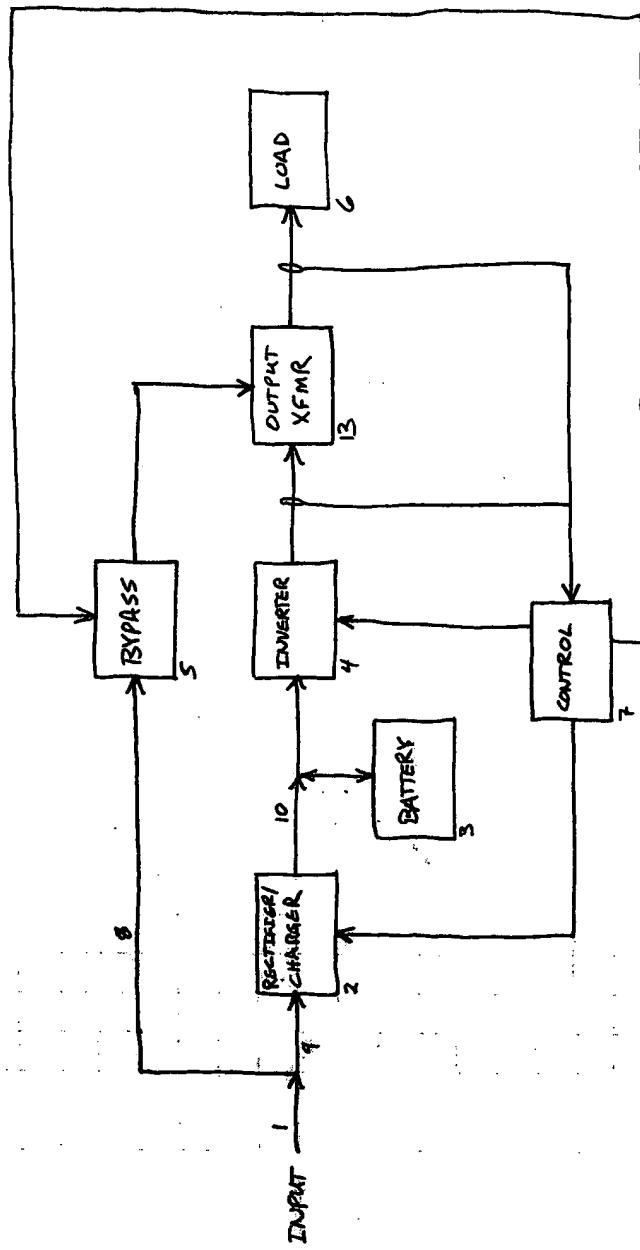


Fig. 1

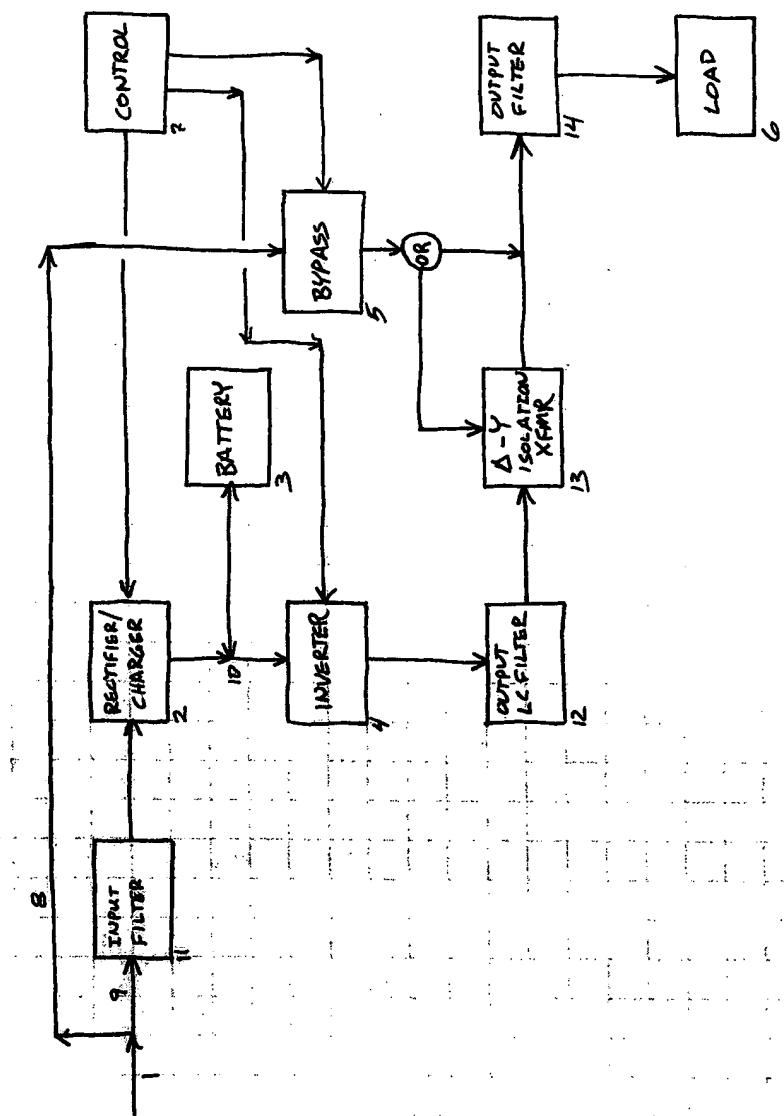
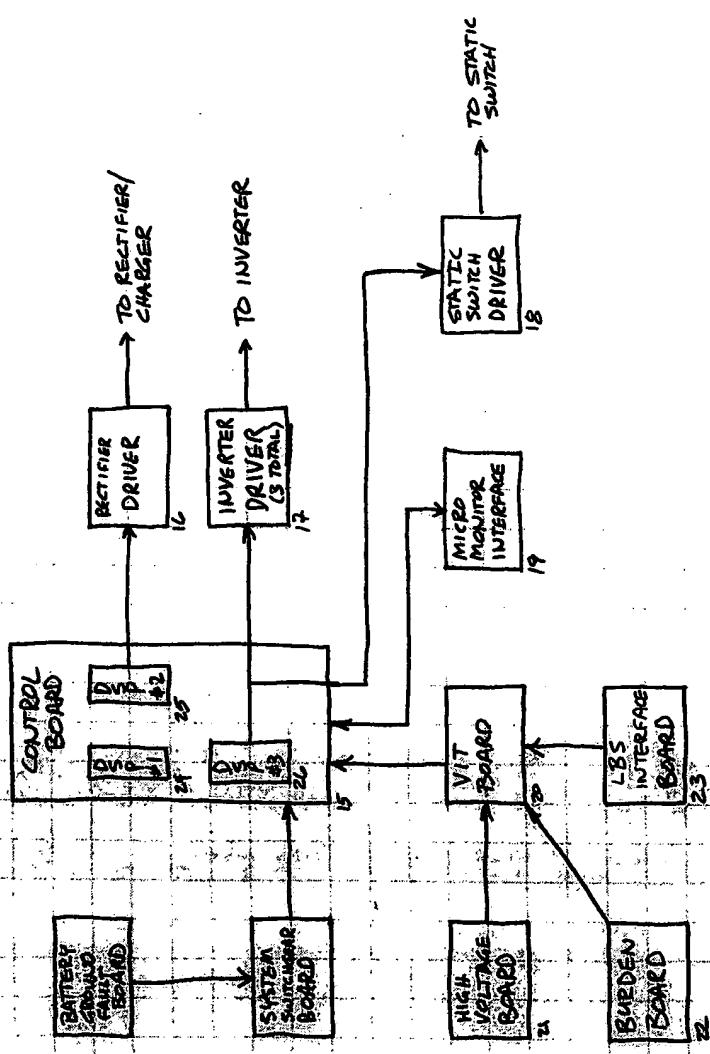


Fig. 2



3

1000723 102601

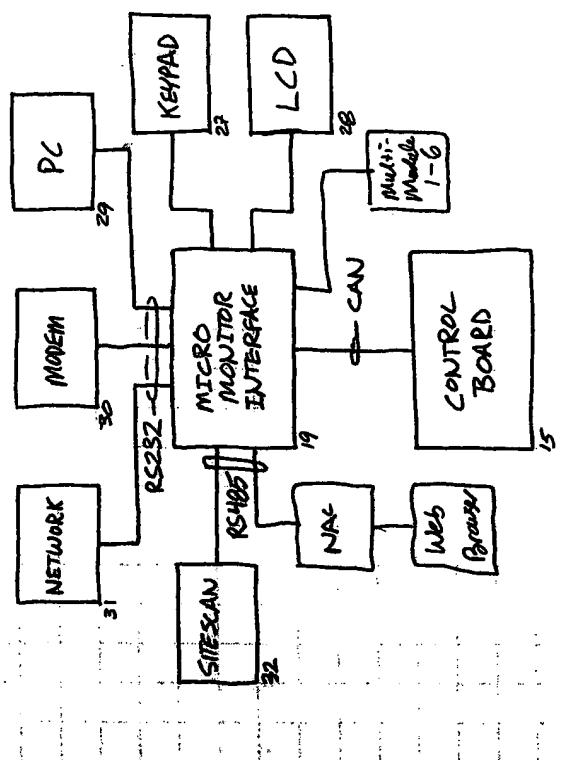


Fig. 4

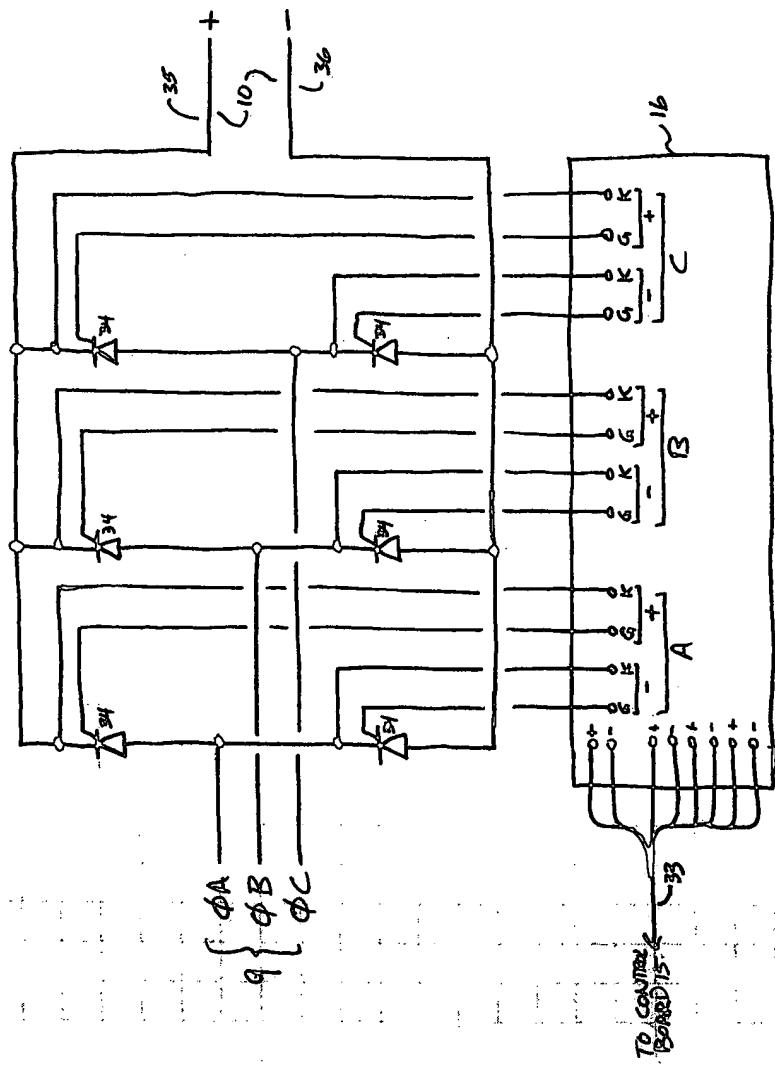


Fig. 5

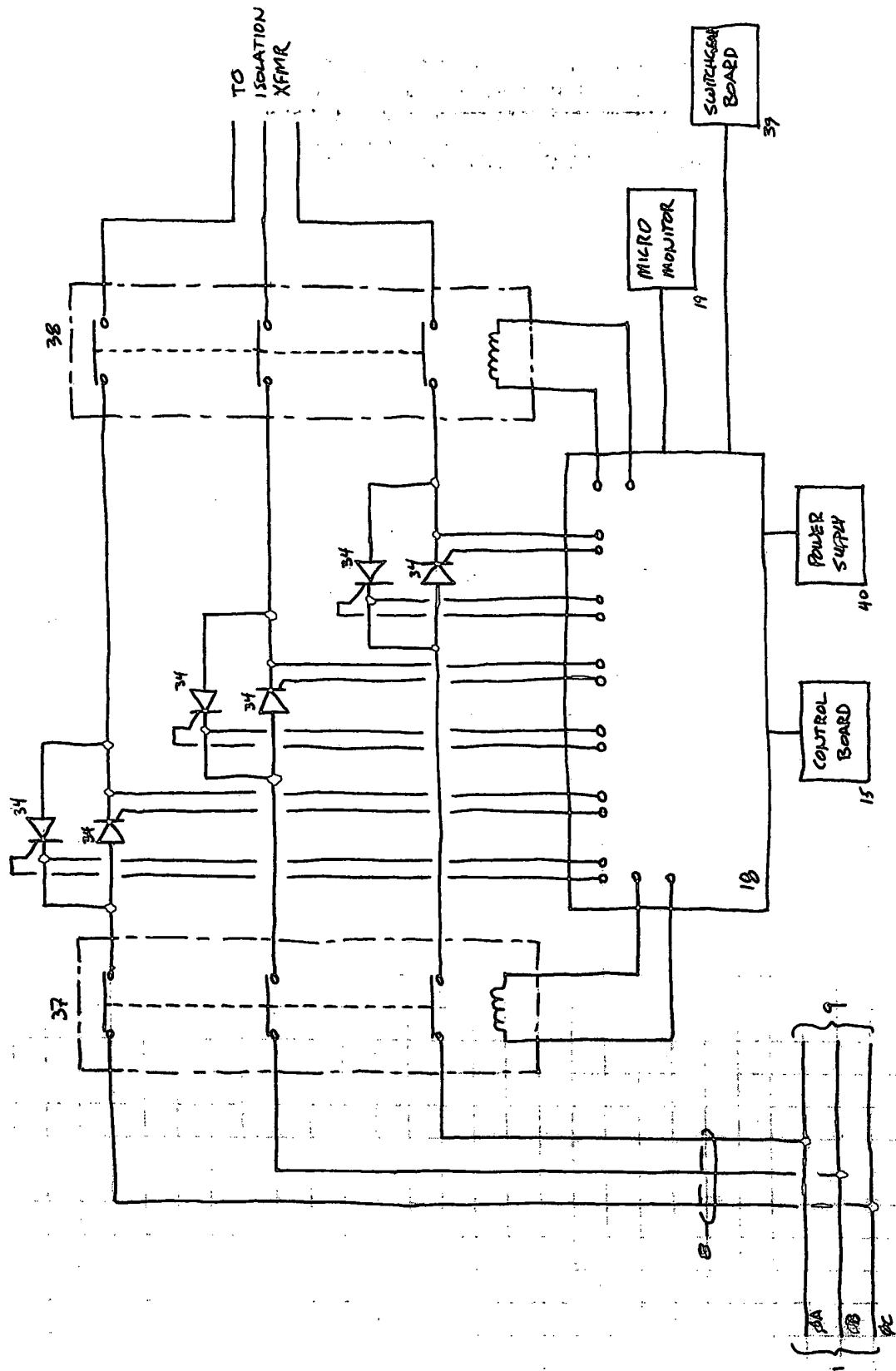
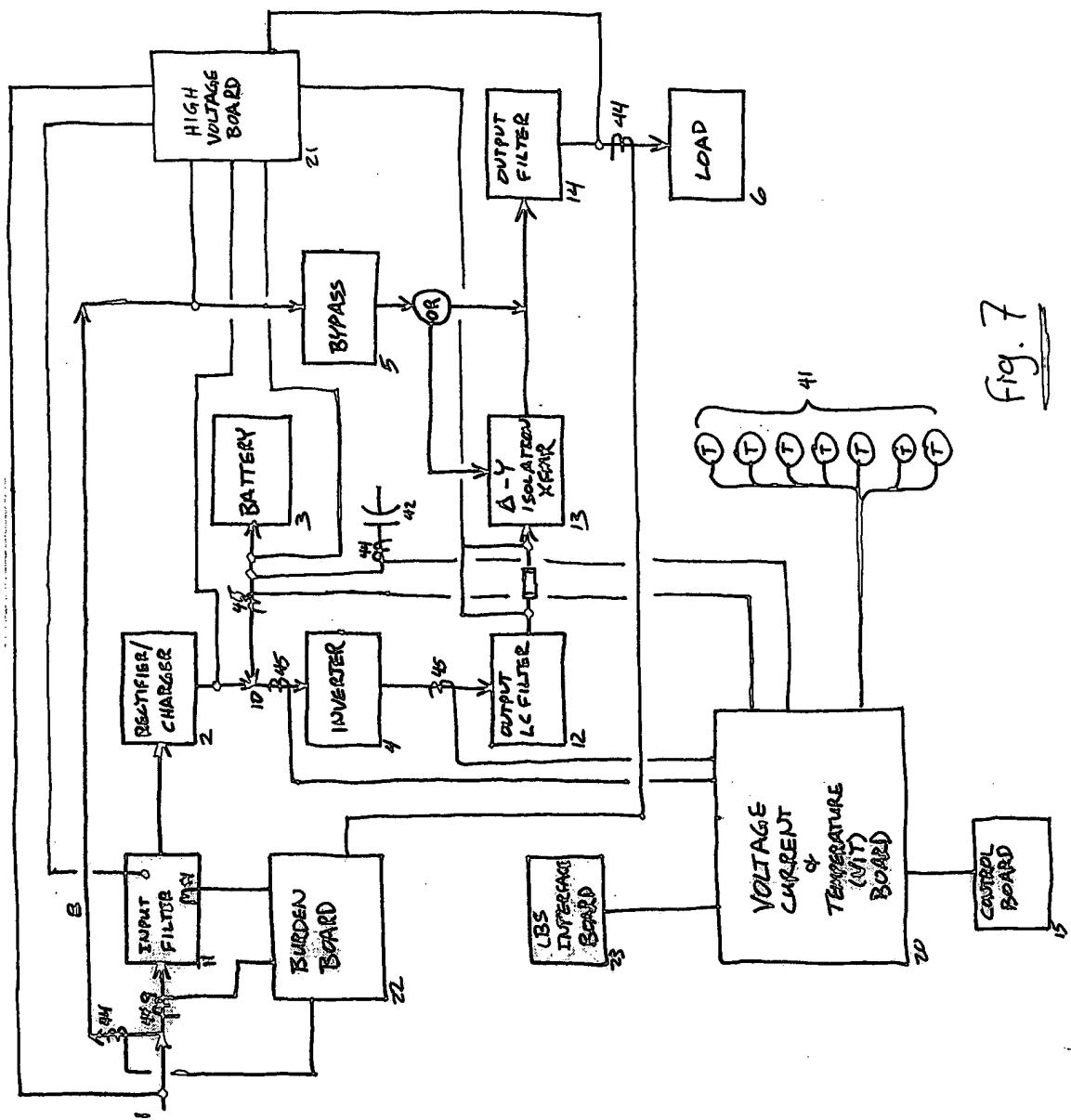


Fig. 6



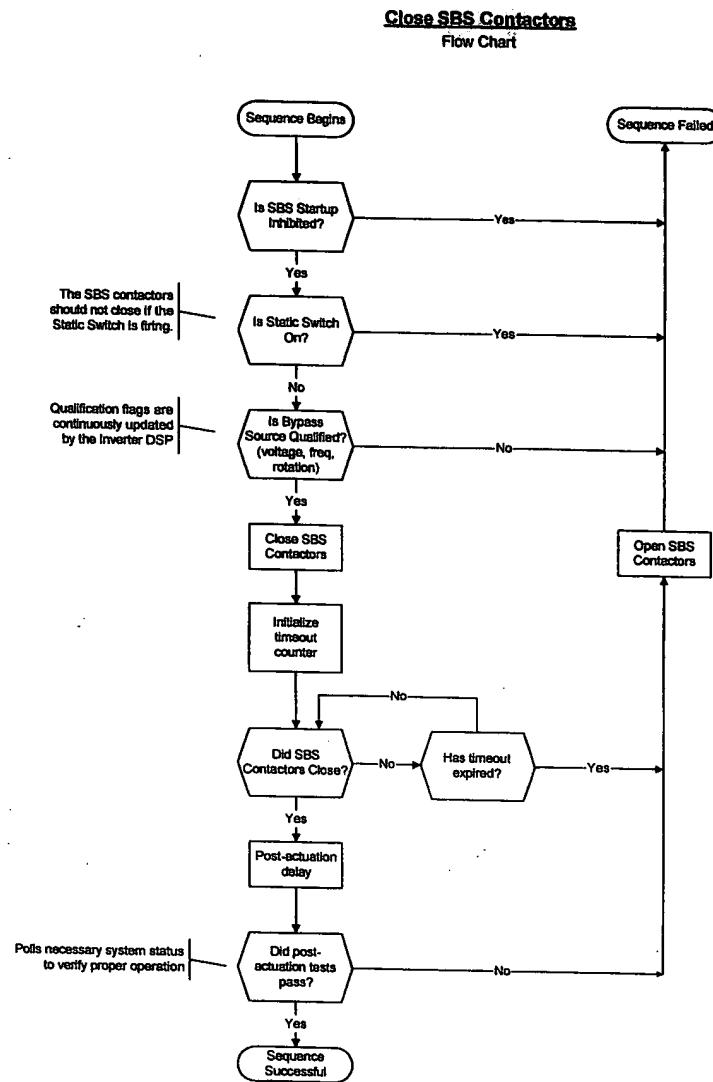
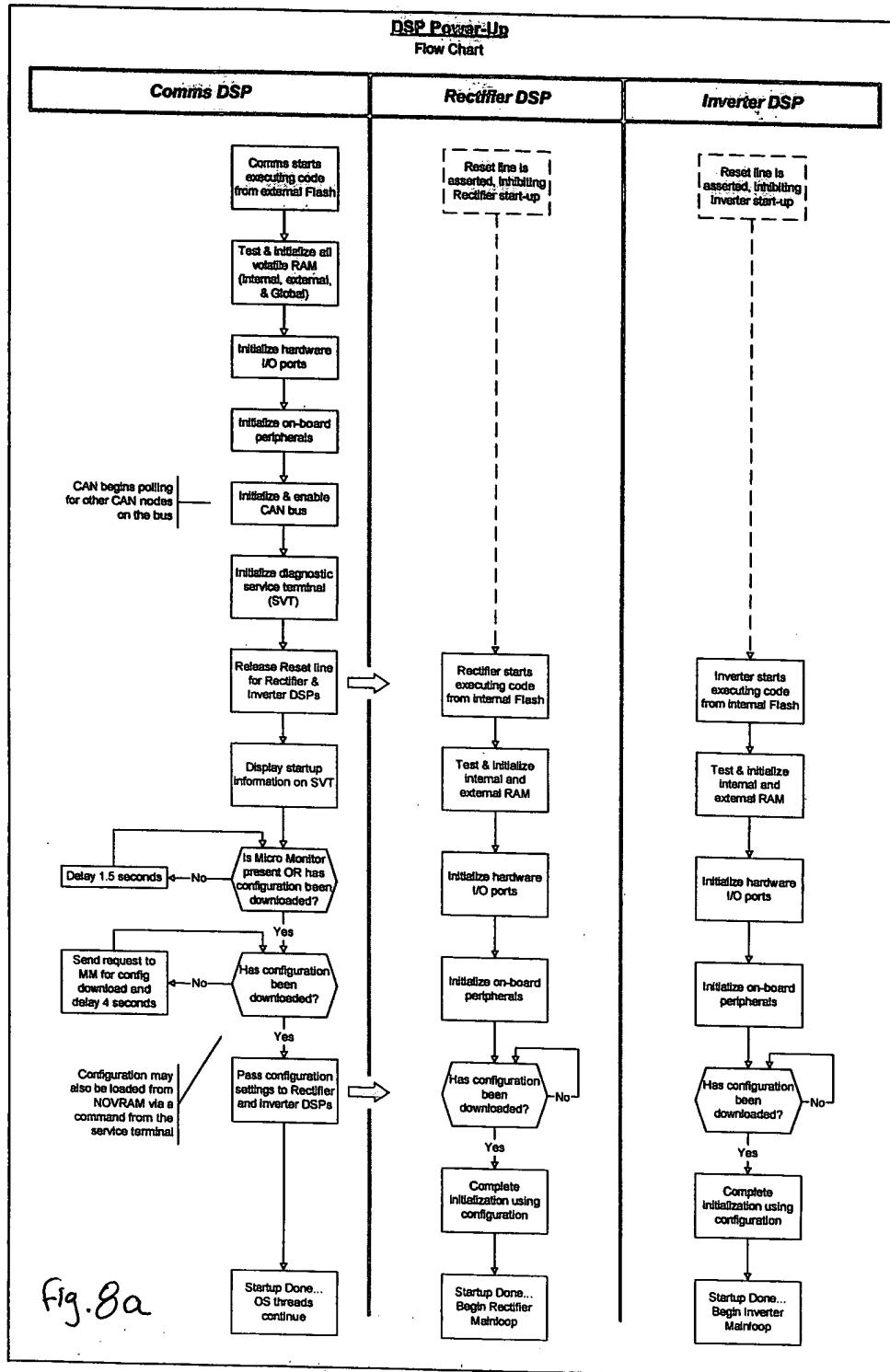


Fig.8



Start SBS  
Flow Chart

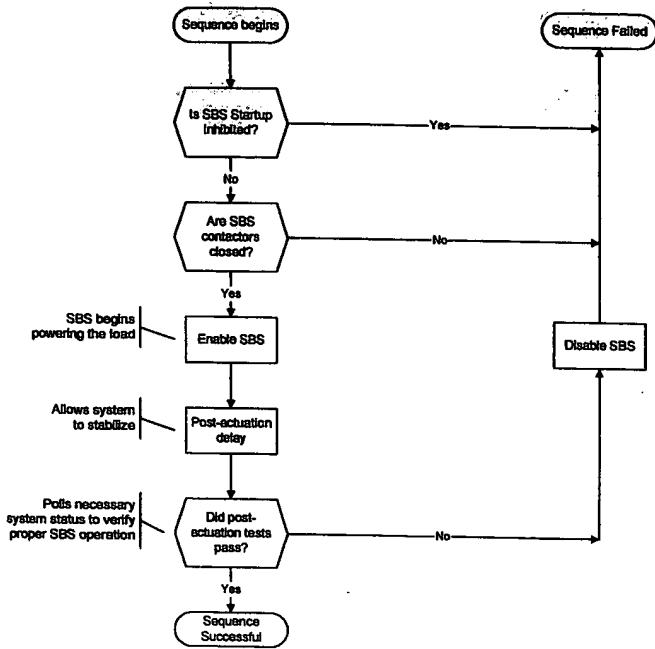


Fig. 9

### Close Input Contactor

Flow Chart

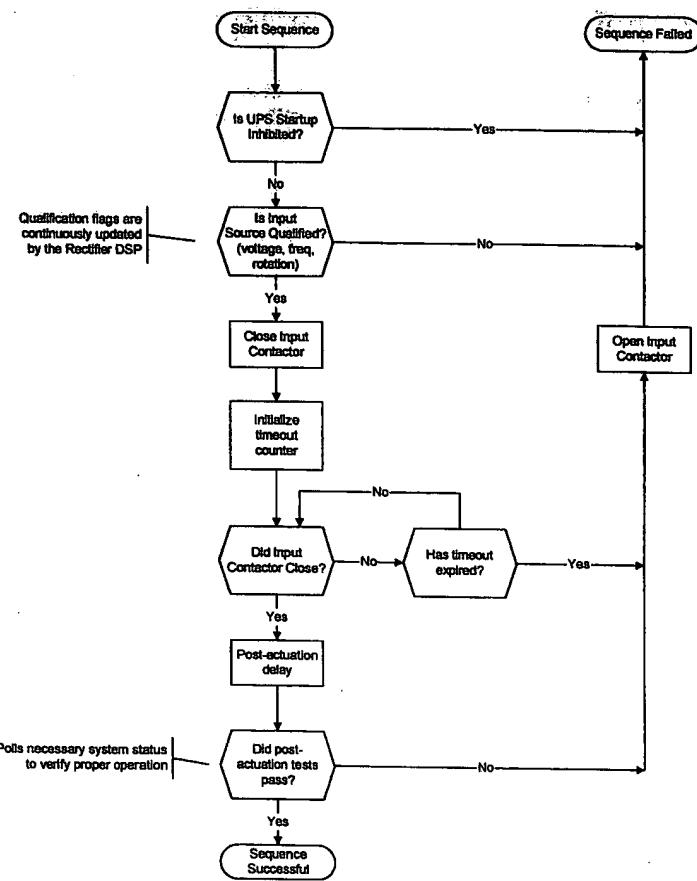


Fig. 10

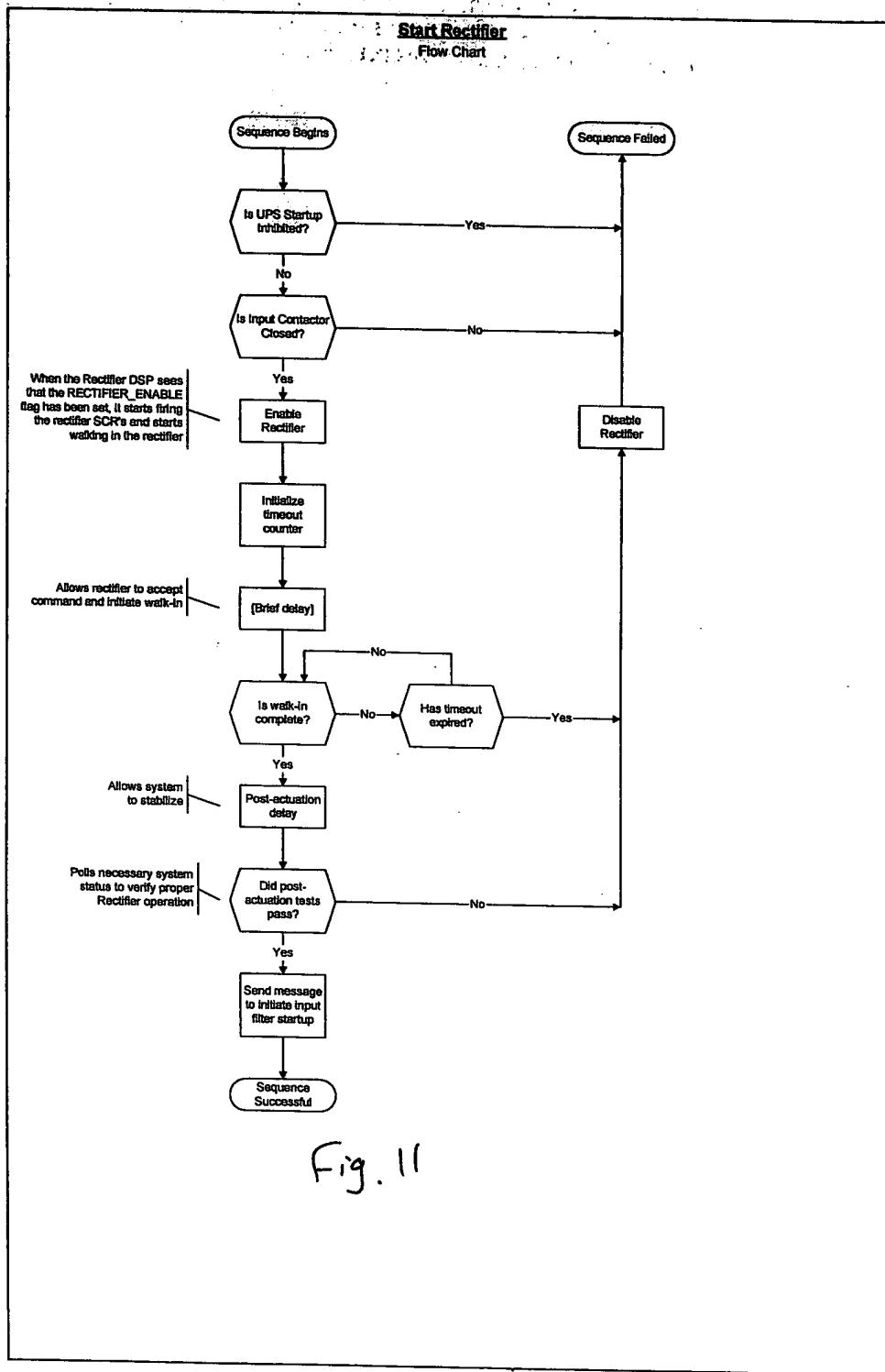


Fig. 11

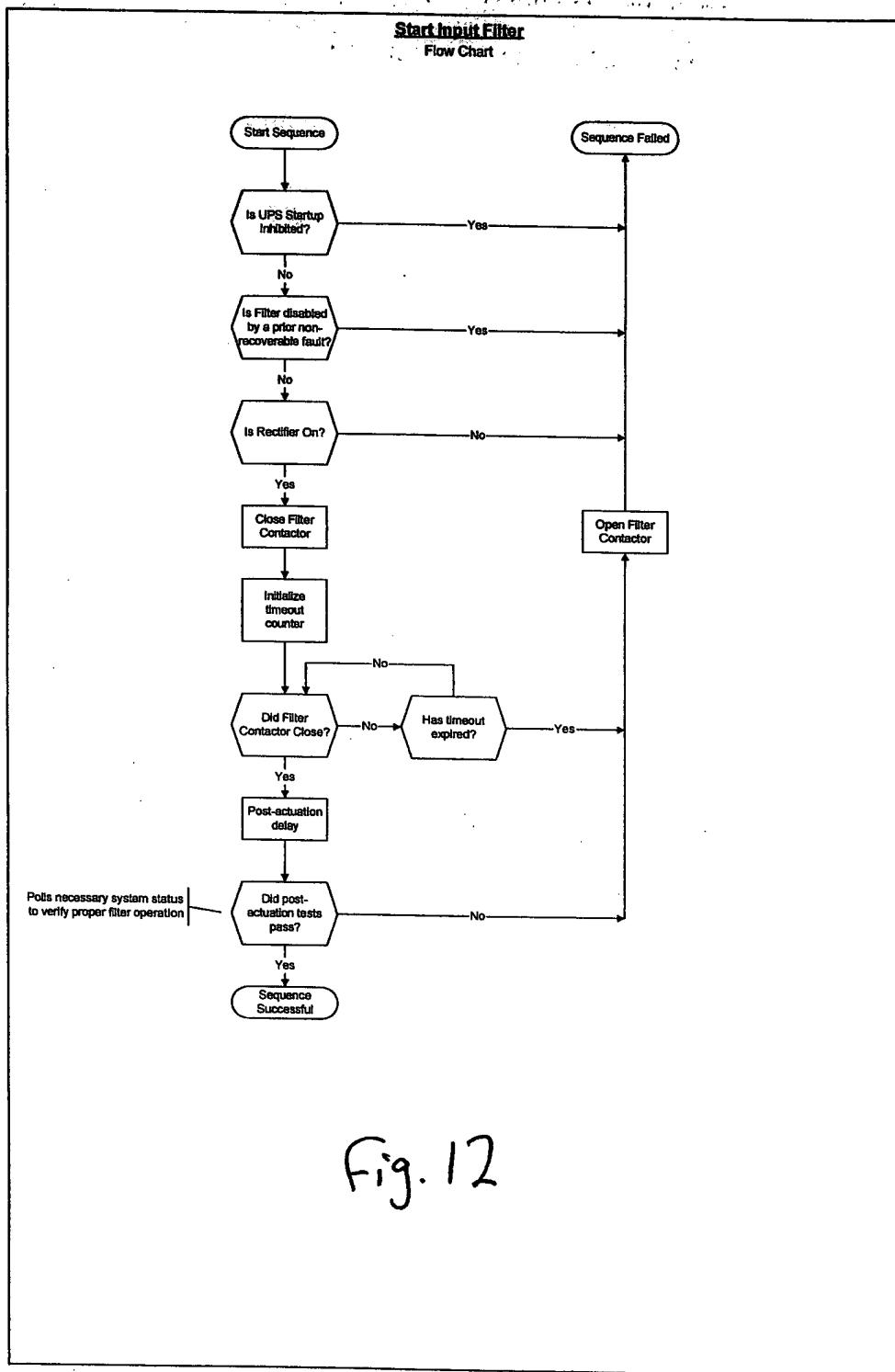


Fig. 12

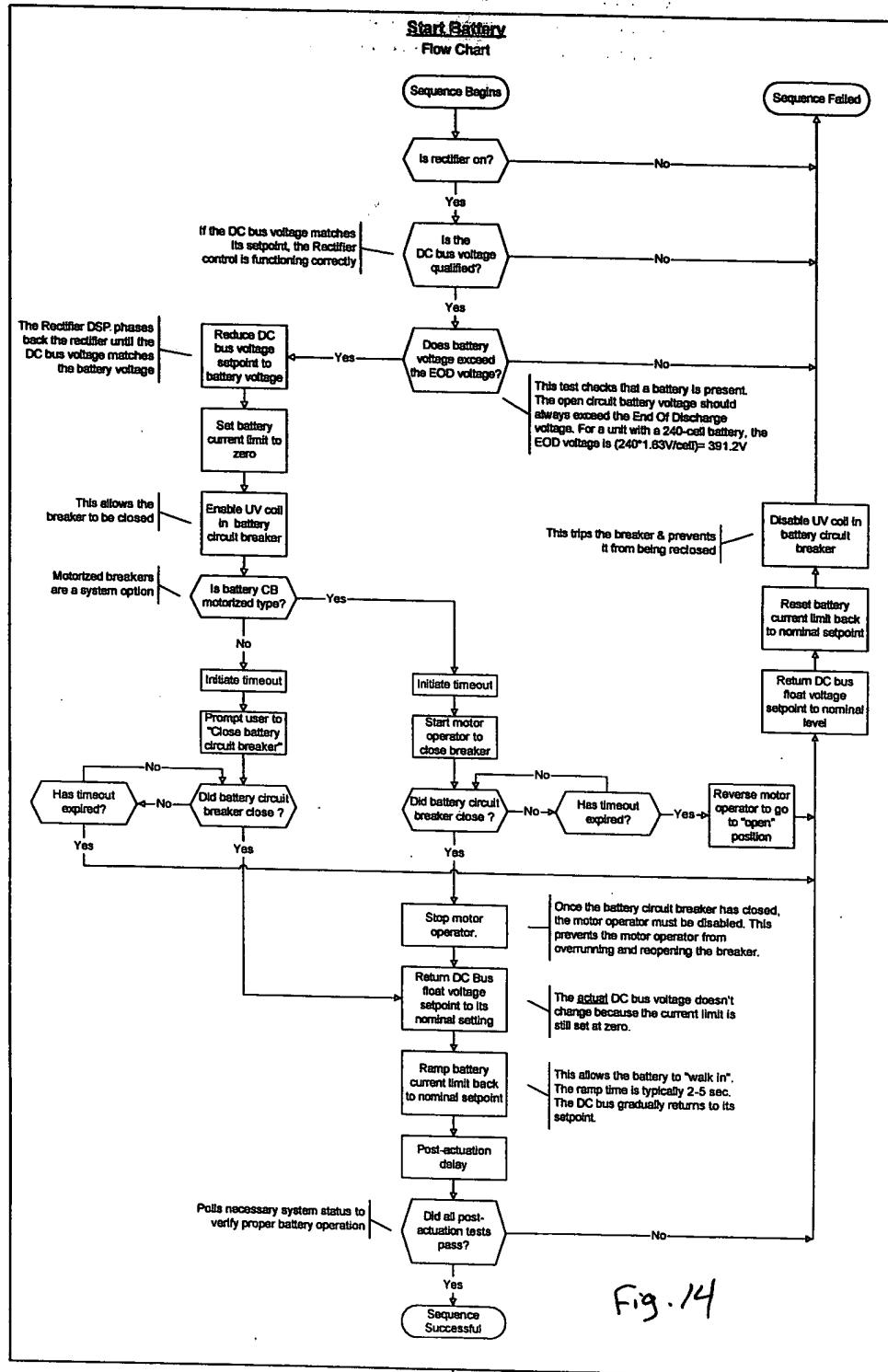


Fig. 14

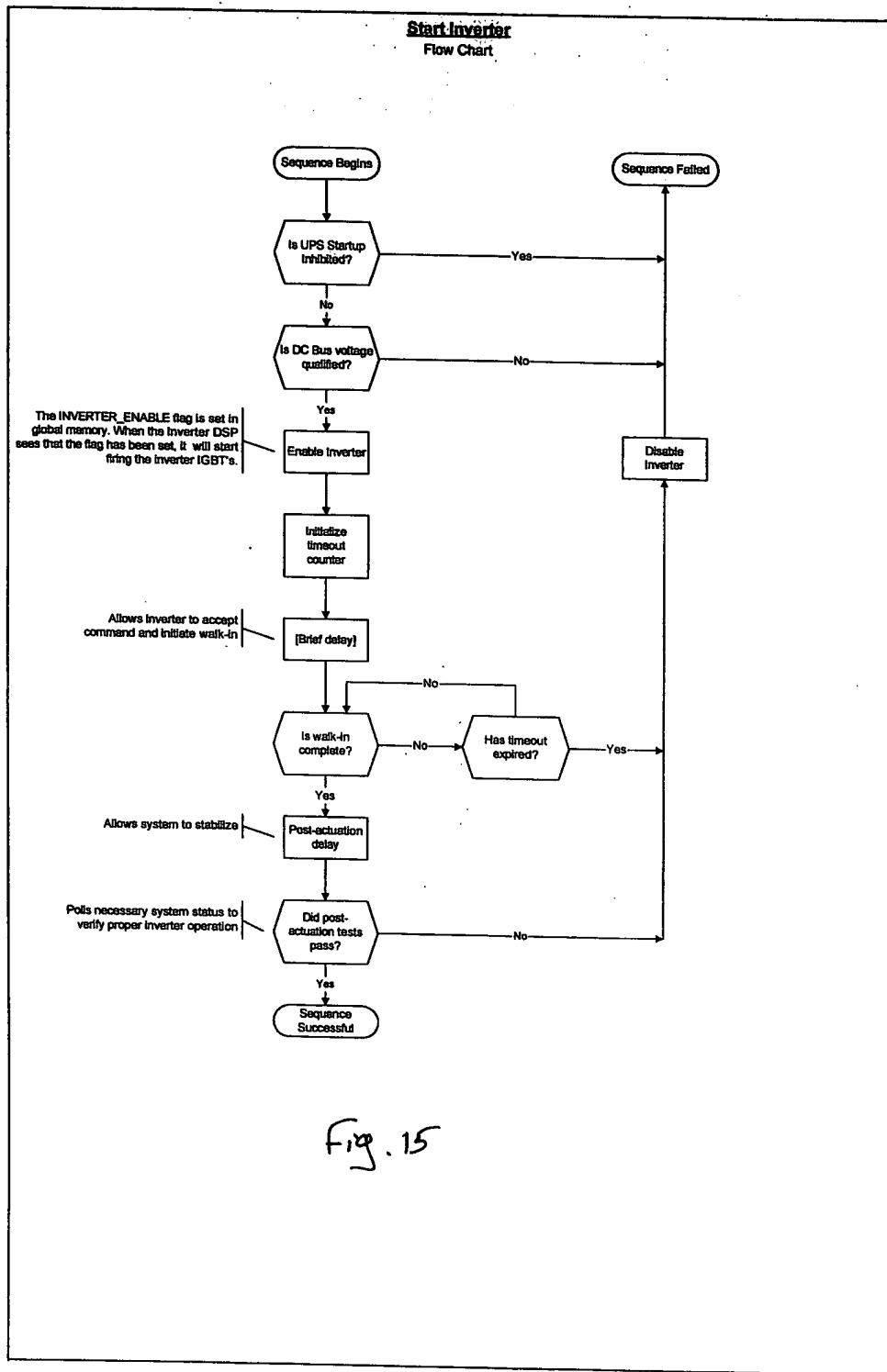


Fig. 15

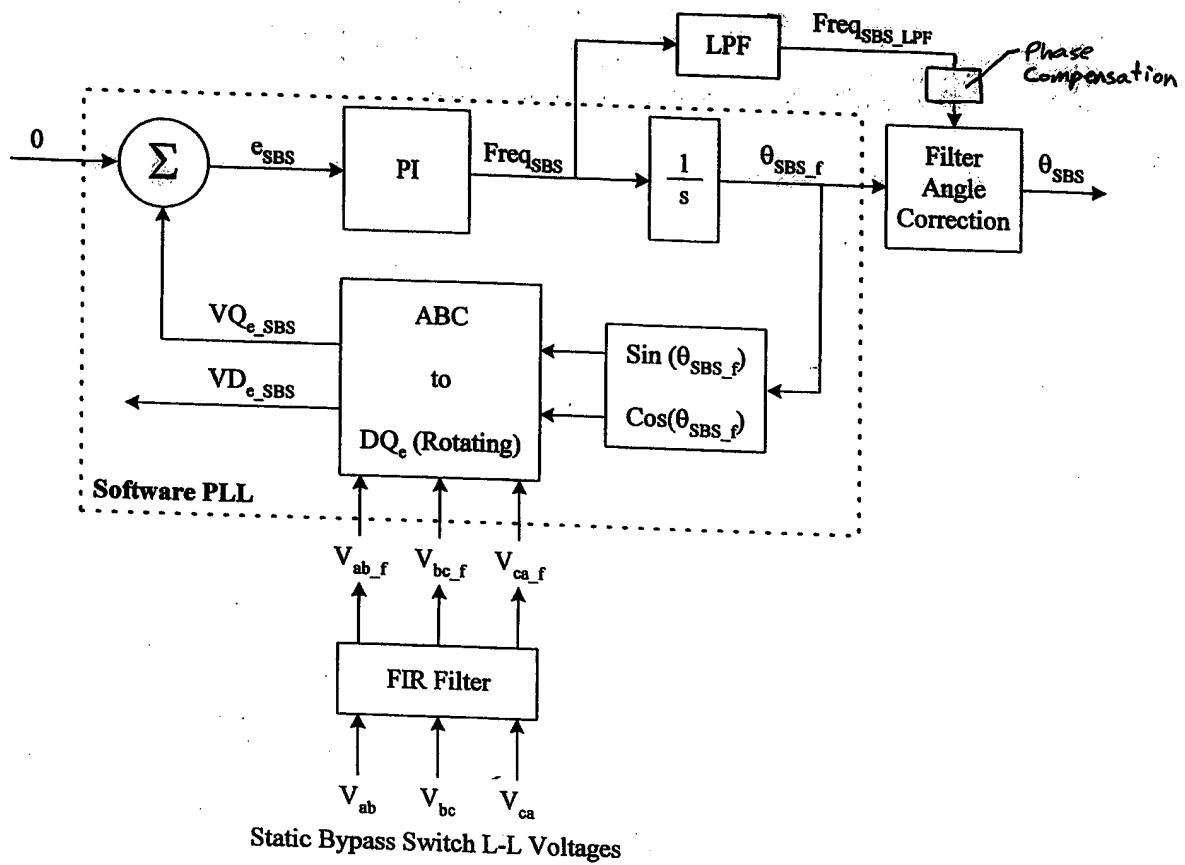


Fig. 16

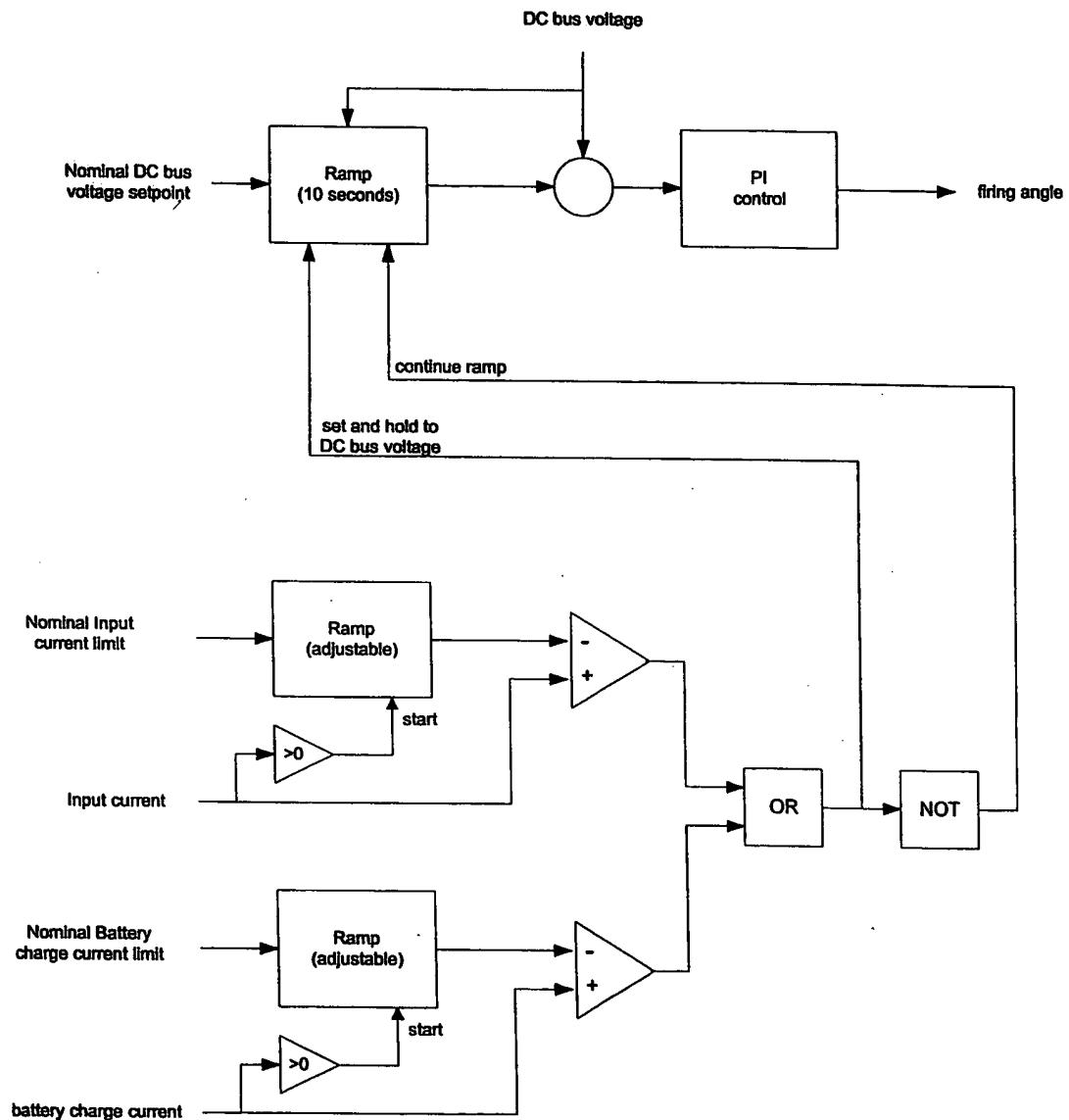


Fig. 17a

## Rectifier Control Block Diagram

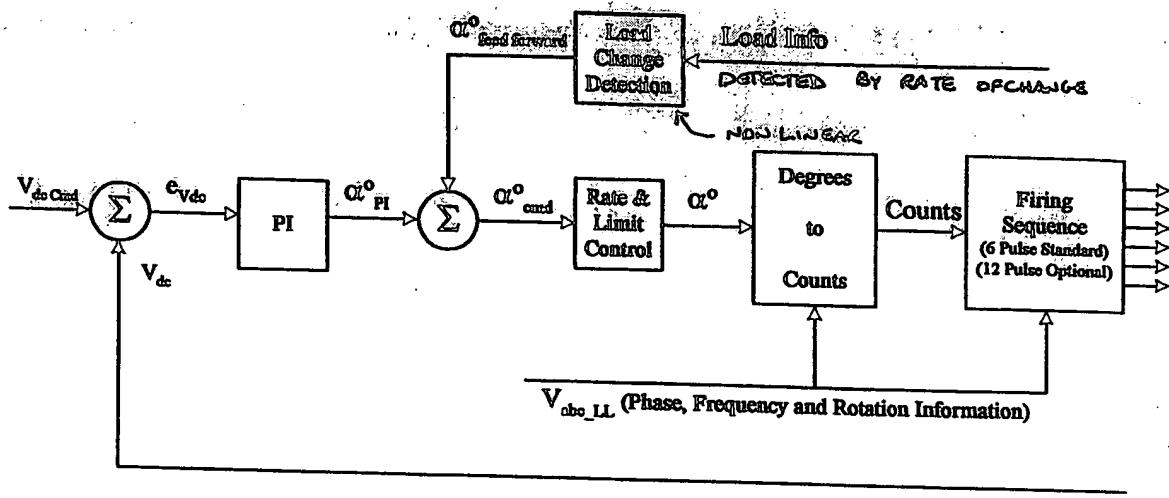


Fig. 17b

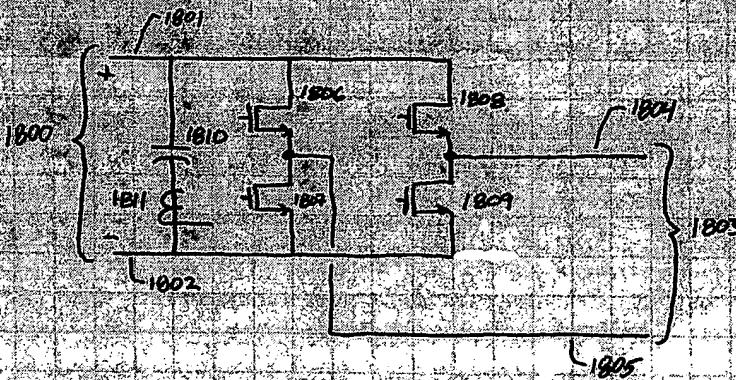


Fig. 18A

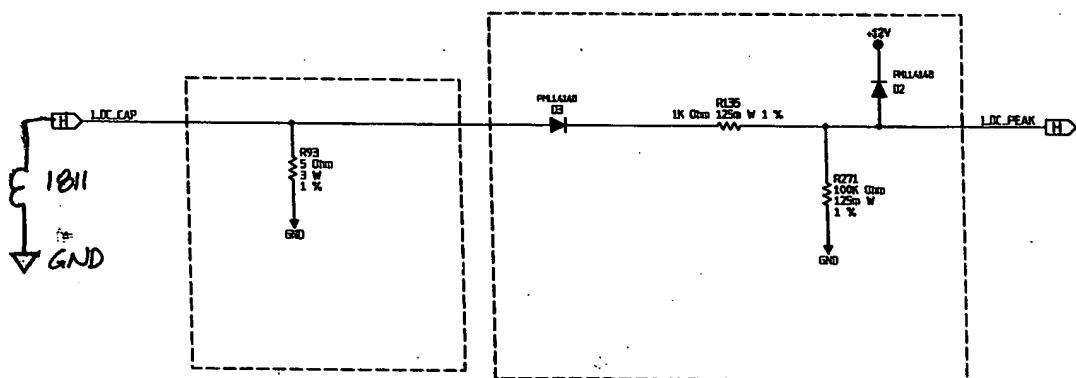


Fig. 18B

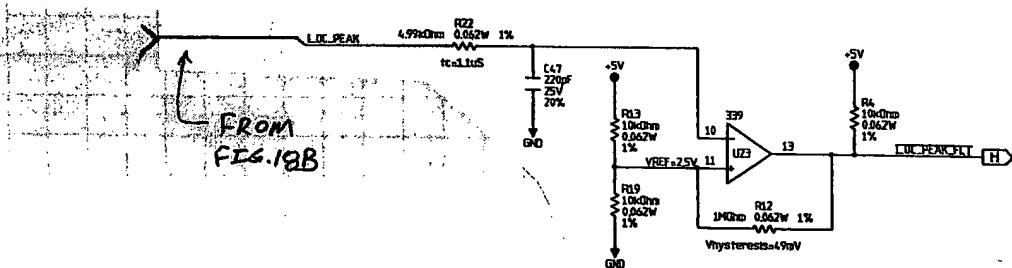


Fig. 18C

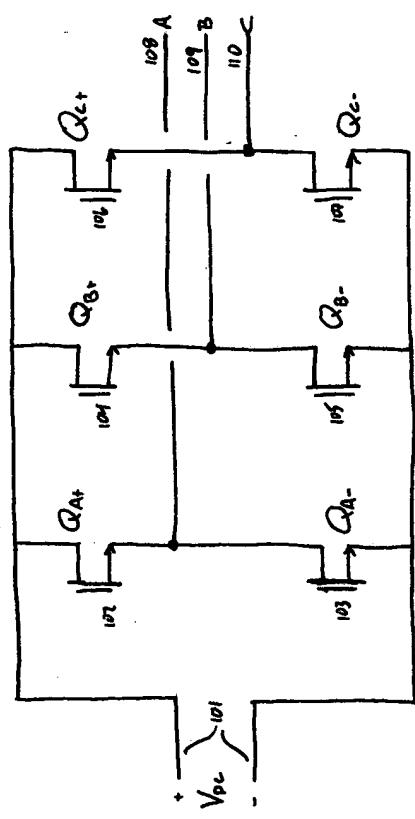
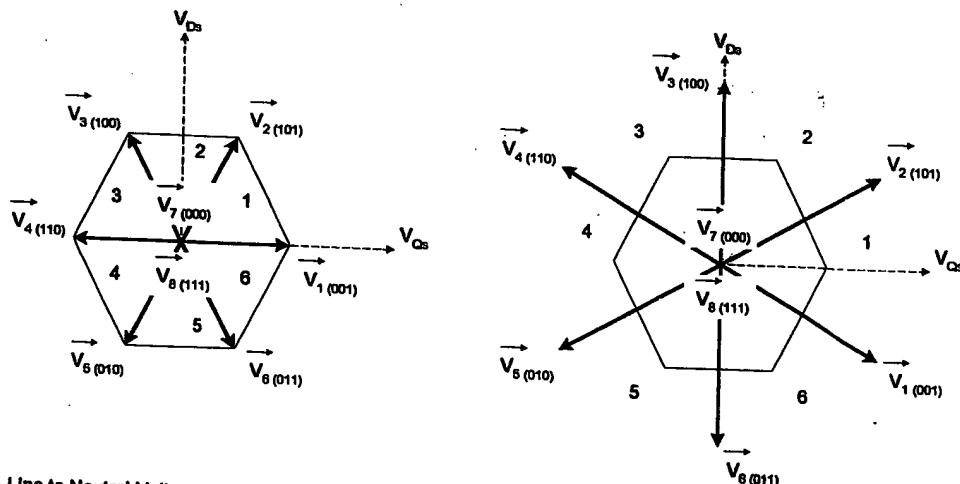


Fig. 19

Switch (0=OFF, 1=ON)			Line to Neutral Voltage Vectors					Line to Line Voltage Vectors				
$S_{C_0}$	$S_{B_0}$	$S_{A_0}$	$V_{AN}$	$V_{BN}$	$V_{CN}$	$V = [V_{C_0}, V_{B_0}]^T$	Vector	$V_{AB}$	$V_{BC}$	$V_{CA}$	$V = [V_{C_0}, V_{B_0}]^T$	Vector
0	0	1	$2/3 V_{dc}$	$-1/3 V_{dc}$	$-1/3 V_{dc}$	$2/3 V_{dc} \angle 0^\circ$	$\vec{V}_1$	$V_{dc}$	0	$-V_{dc}$	$2\sqrt{3} V_{dc} \angle -30^\circ$	$\vec{V}_1$
1	0	1	$1/3 V_{dc}$	$-2/3 V_{dc}$	$1/3 V_{dc}$	$2/3 V_{dc} \angle 60^\circ$	$\vec{V}_2$	$V_{dc}$	$-V_{dc}$	0	$2\sqrt{3} V_{dc} \angle 30^\circ$	$\vec{V}_2$
1	0	0	$-1/3 V_{dc}$	$-1/3 V_{dc}$	$2/3 V_{dc}$	$2/3 V_{dc} \angle 120^\circ$	$\vec{V}_3$	0	$-V_{dc}$	$V_{dc}$	$2\sqrt{3} V_{dc} \angle 90^\circ$	$\vec{V}_3$
1	1	0	$-2/3 V_{dc}$	$1/3 V_{dc}$	$1/3 V_{dc}$	$2/3 V_{dc} \angle 180^\circ$	$\vec{V}_4$	$-V_{dc}$	0	$V_{dc}$	$2\sqrt{3} V_{dc} \angle 150^\circ$	$\vec{V}_4$
0	1	0	$-1/3 V_{dc}$	$2/3 V_{dc}$	$-1/3 V_{dc}$	$2/3 V_{dc} \angle 240^\circ$	$\vec{V}_5$	$-V_{dc}$	$V_{dc}$	0	$2\sqrt{3} V_{dc} \angle 210^\circ$	$\vec{V}_5$
0	1	1	$1/3 V_{dc}$	$1/3 V_{dc}$	$-2/3 V_{dc}$	$2/3 V_{dc} \angle 300^\circ$	$\vec{V}_6$	0	$V_{dc}$	$-V_{dc}$	$2\sqrt{3} V_{dc} \angle 270^\circ$	$\vec{V}_6$
0	0	0	0	0	0	0	$\vec{V}_7$	0	0	0	0	$\vec{V}_7$
1	1	1	0	0	0	0	$\vec{V}_8$	0	0	0	0	$\vec{V}_8$

Possible Switch Combinations (note: 0 = Switch OFF, 1 = Switch ON), Equivalent Line to Neutral Voltage Vectors and Equivalent Line to Line Voltage Vectors.

Fig. 20



Line to Neutral Voltage Vectors Projected Onto The DQs Axis (Note: (001) =  $S_{C_0}$  OFF,  $S_{B_0}$  OFF,  $S_{A_0}$  ON)

Line to Line Voltage Vectors Projected Onto The DQs Axis (Note: (001) =  $S_{C_0}$  OFF,  $S_{B_0}$  OFF,  $S_{A_0}$  ON)

Fig. 21

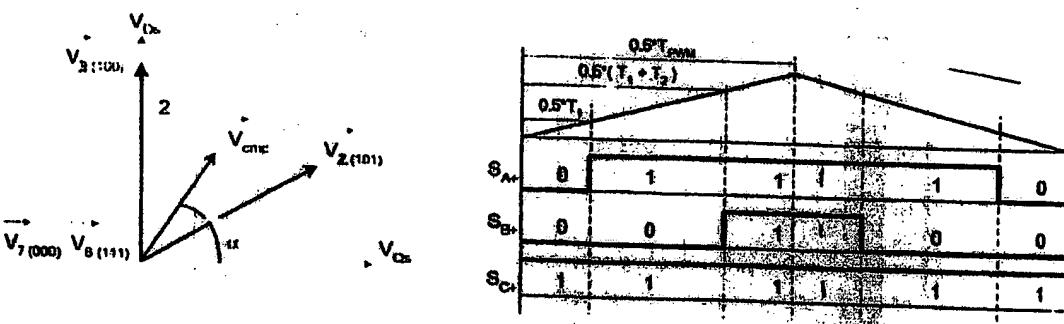


Fig. 22

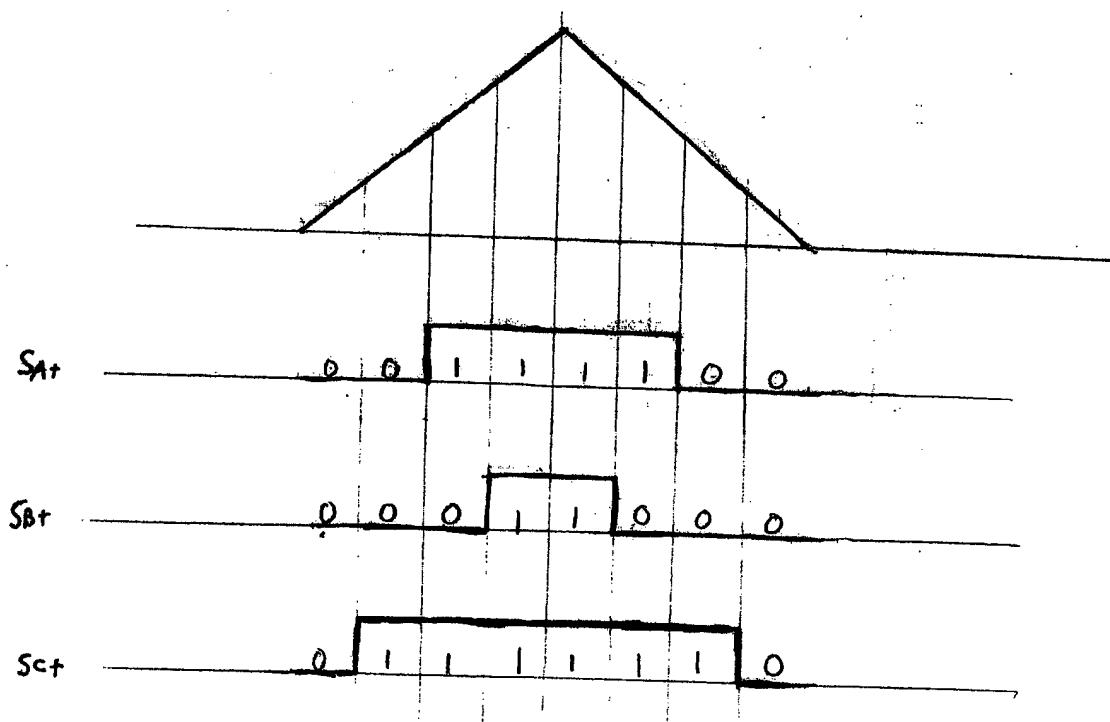


Fig. 22a

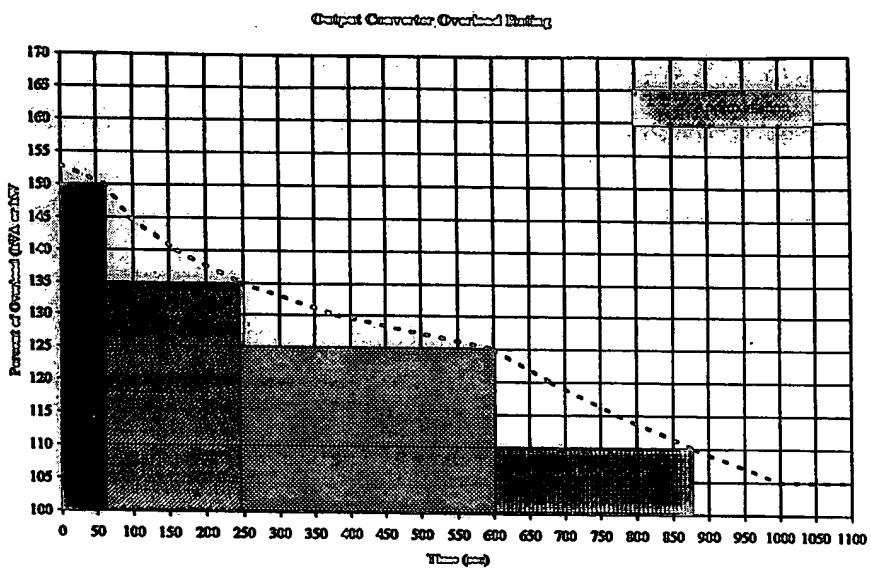


Fig. 23

Equivalent Watt - Seconds as Computed from Overload Characteristic Curve

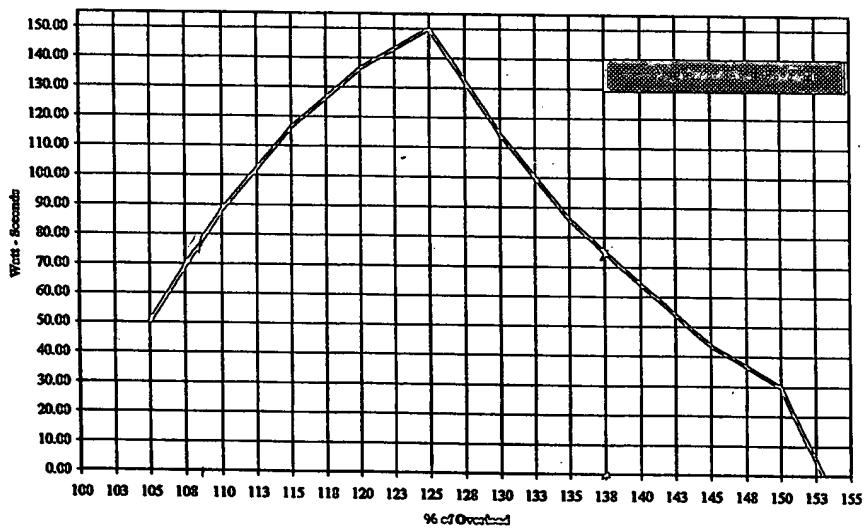


Fig. 24

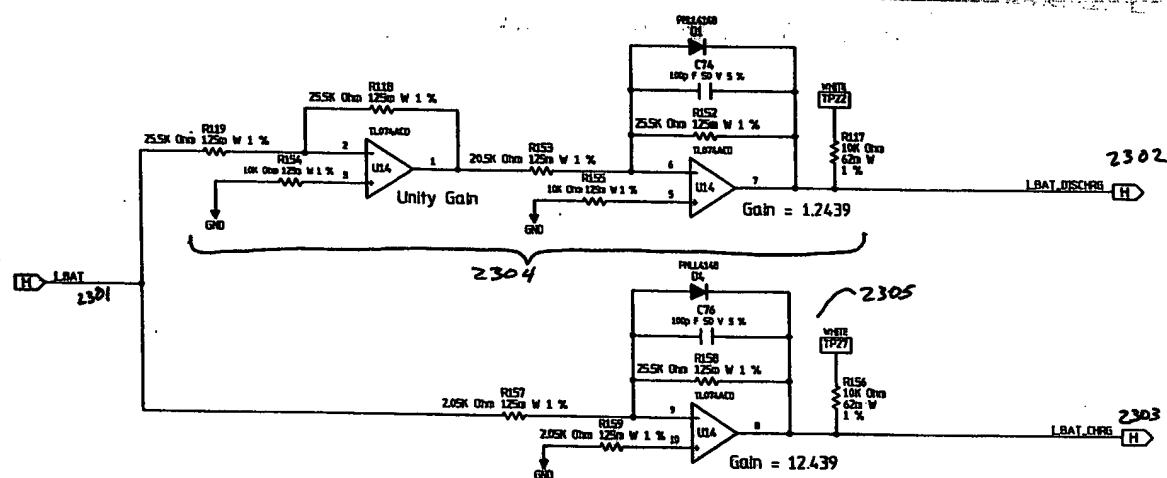


Fig. 25

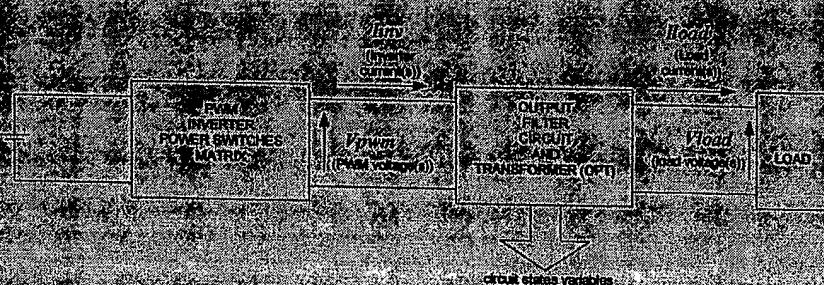


Fig. 26

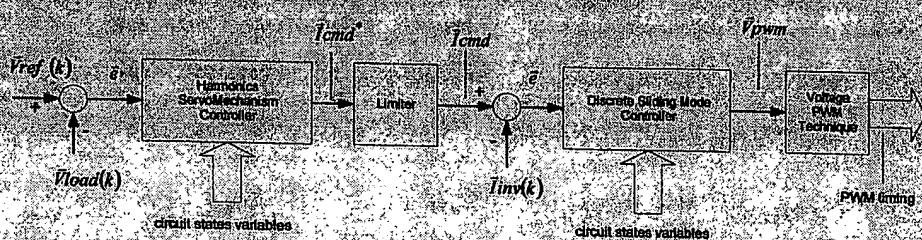


Fig. 27

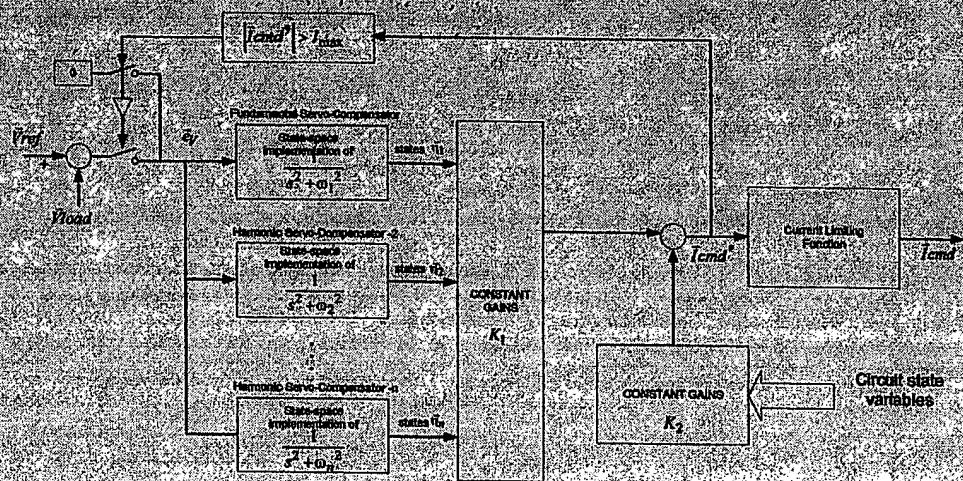


Fig. 28

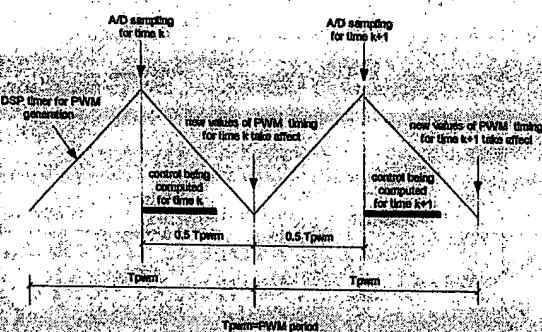


Fig. 29

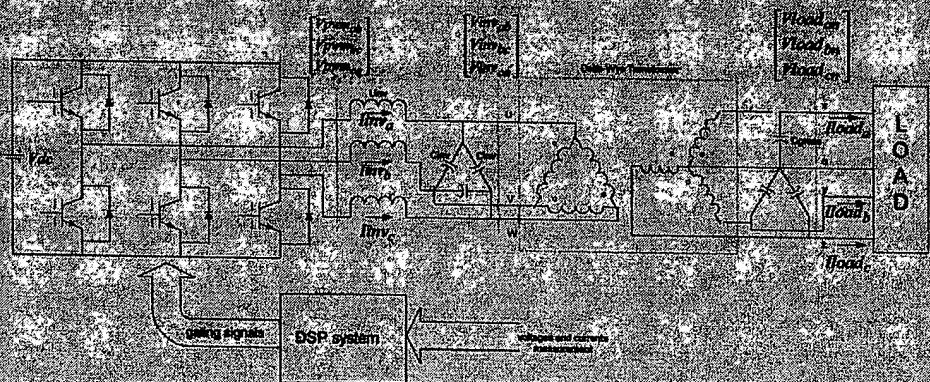


Fig. 30

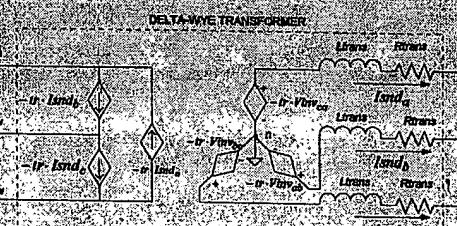


Fig. 31

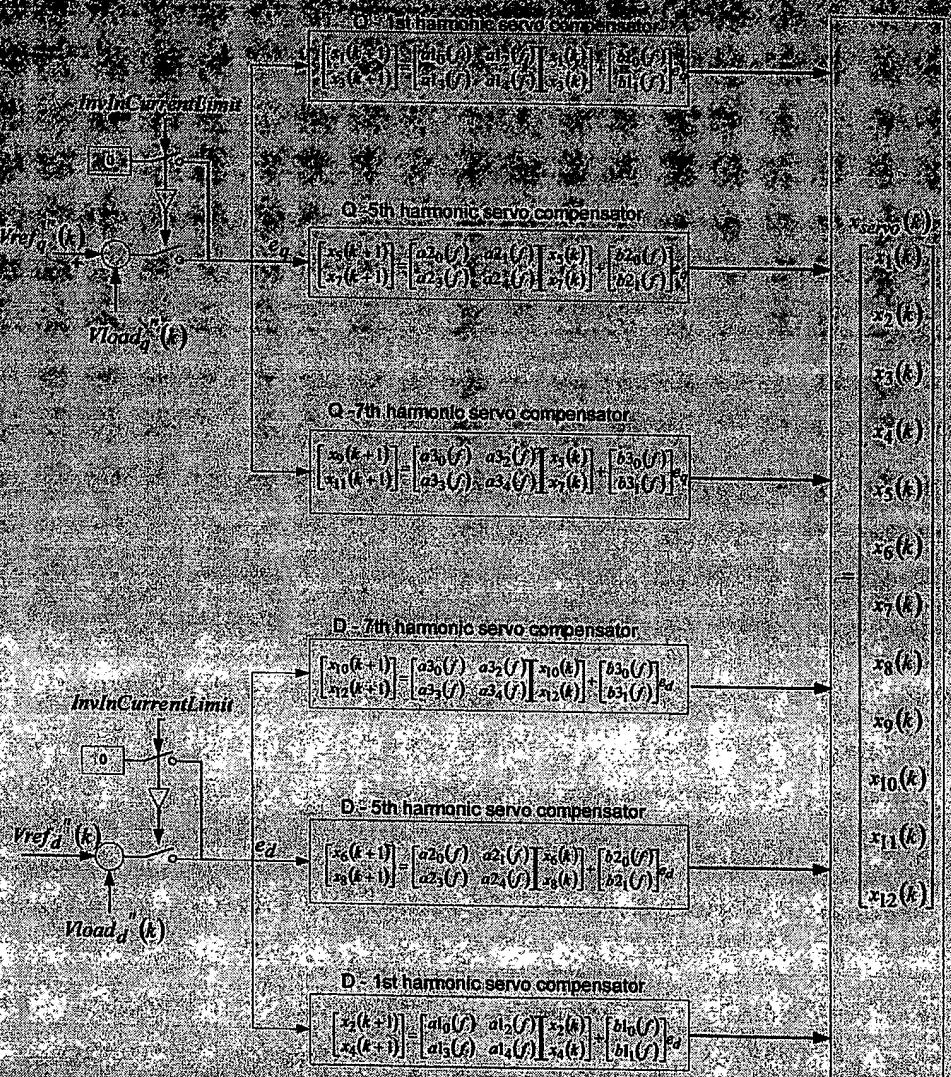


Fig. 32 Discrete time servo compensator

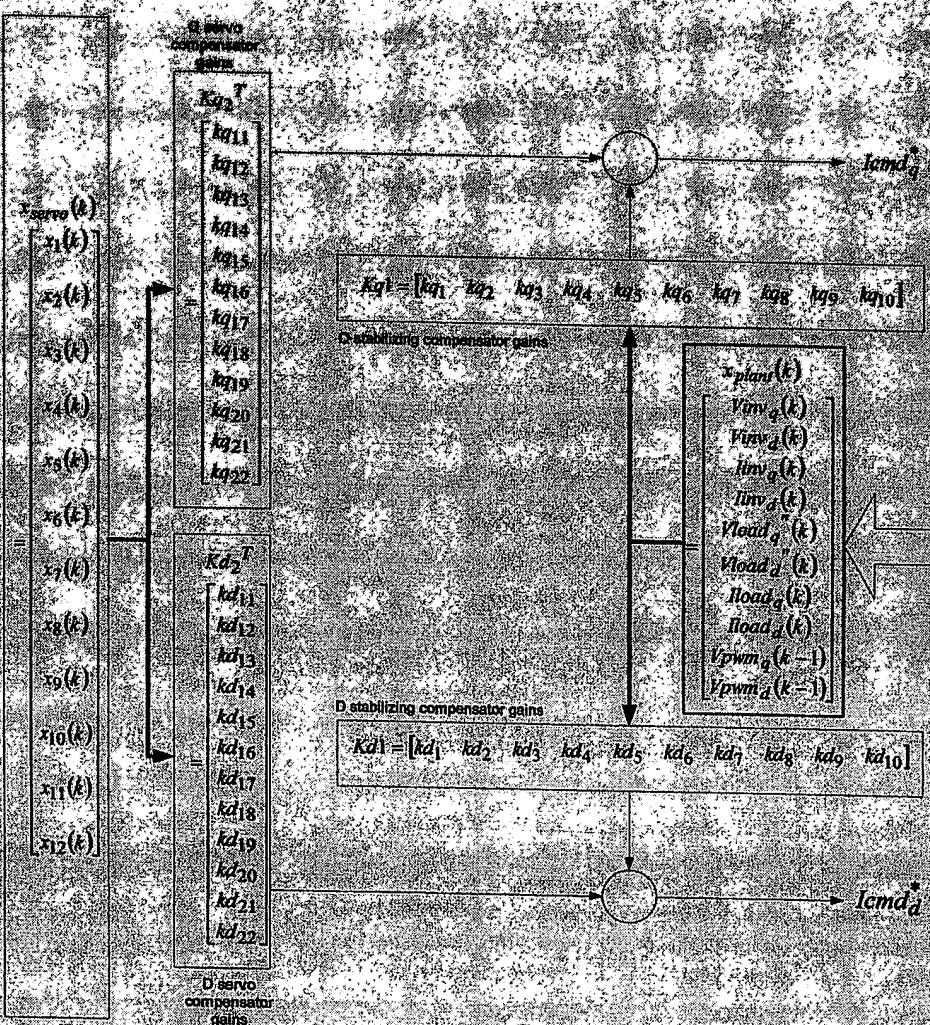
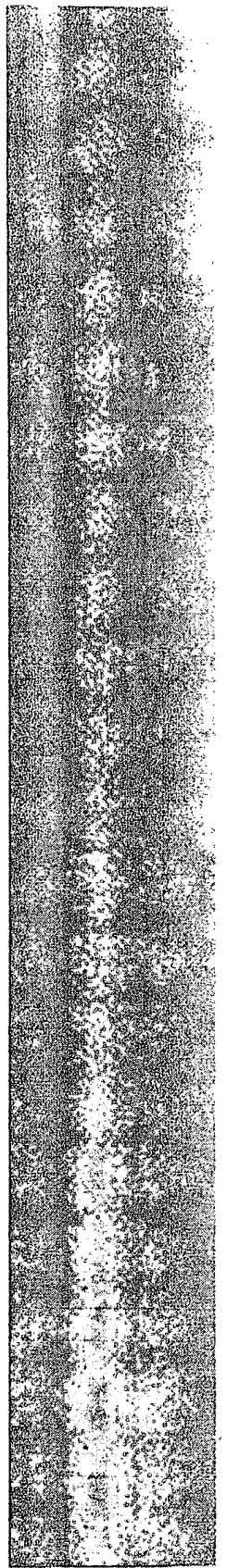
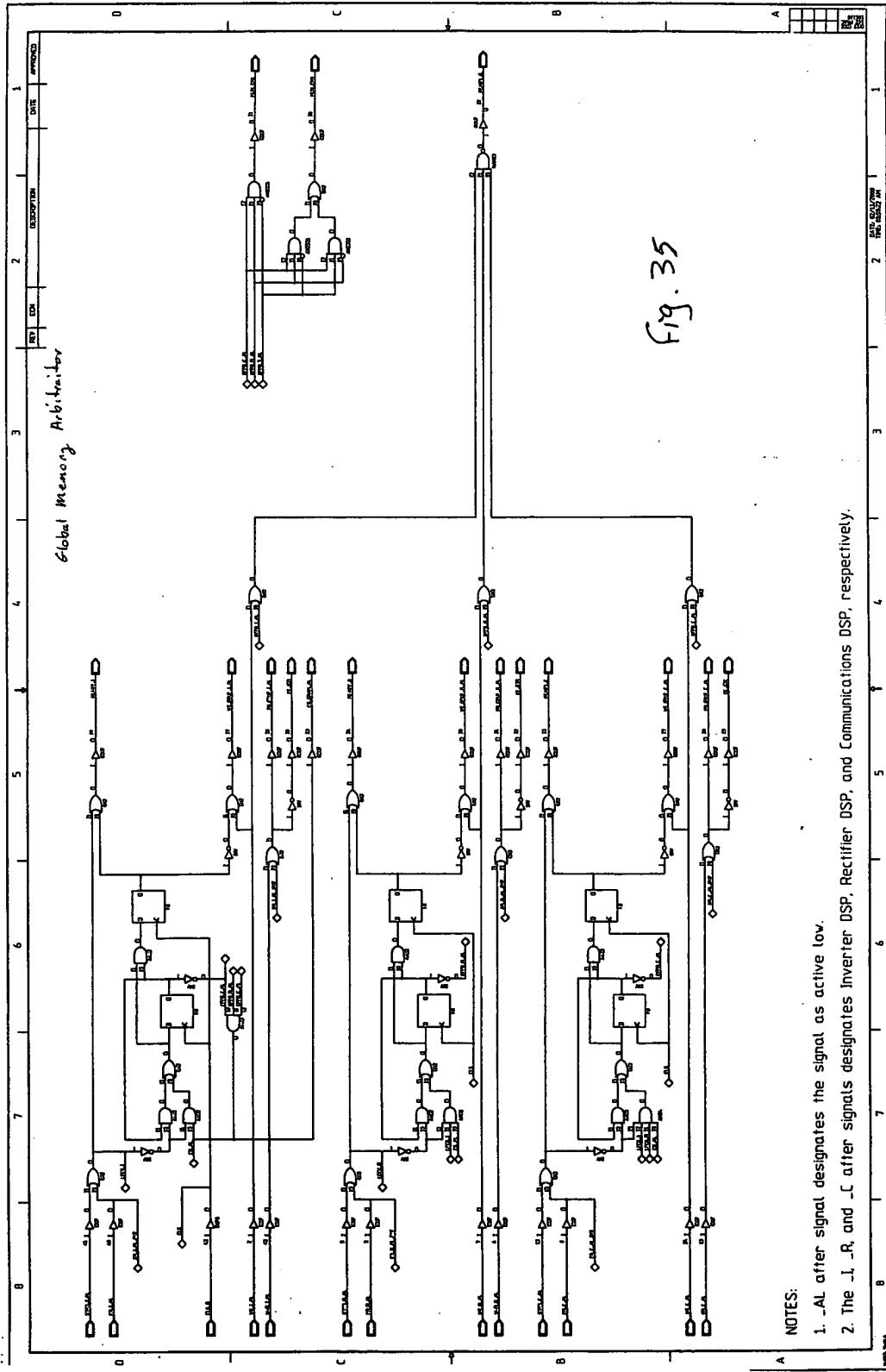


Fig. 33 Discrete time servo compensator (cont.)



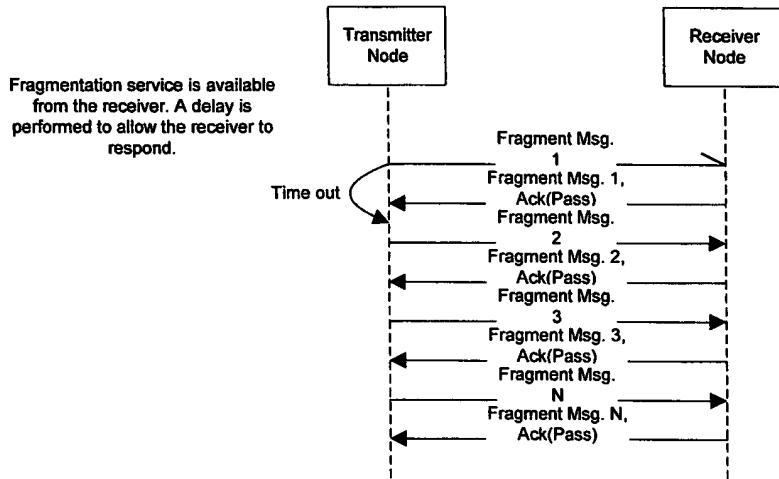


Fig. 36

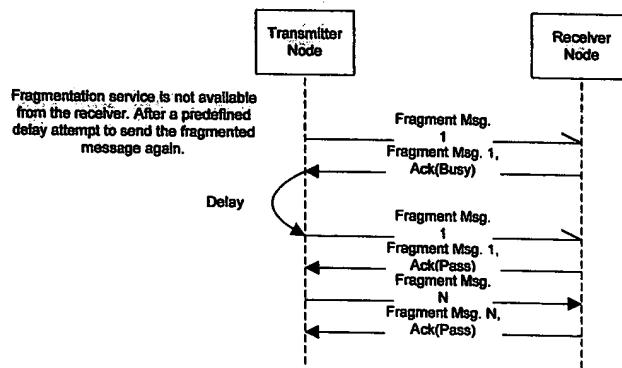
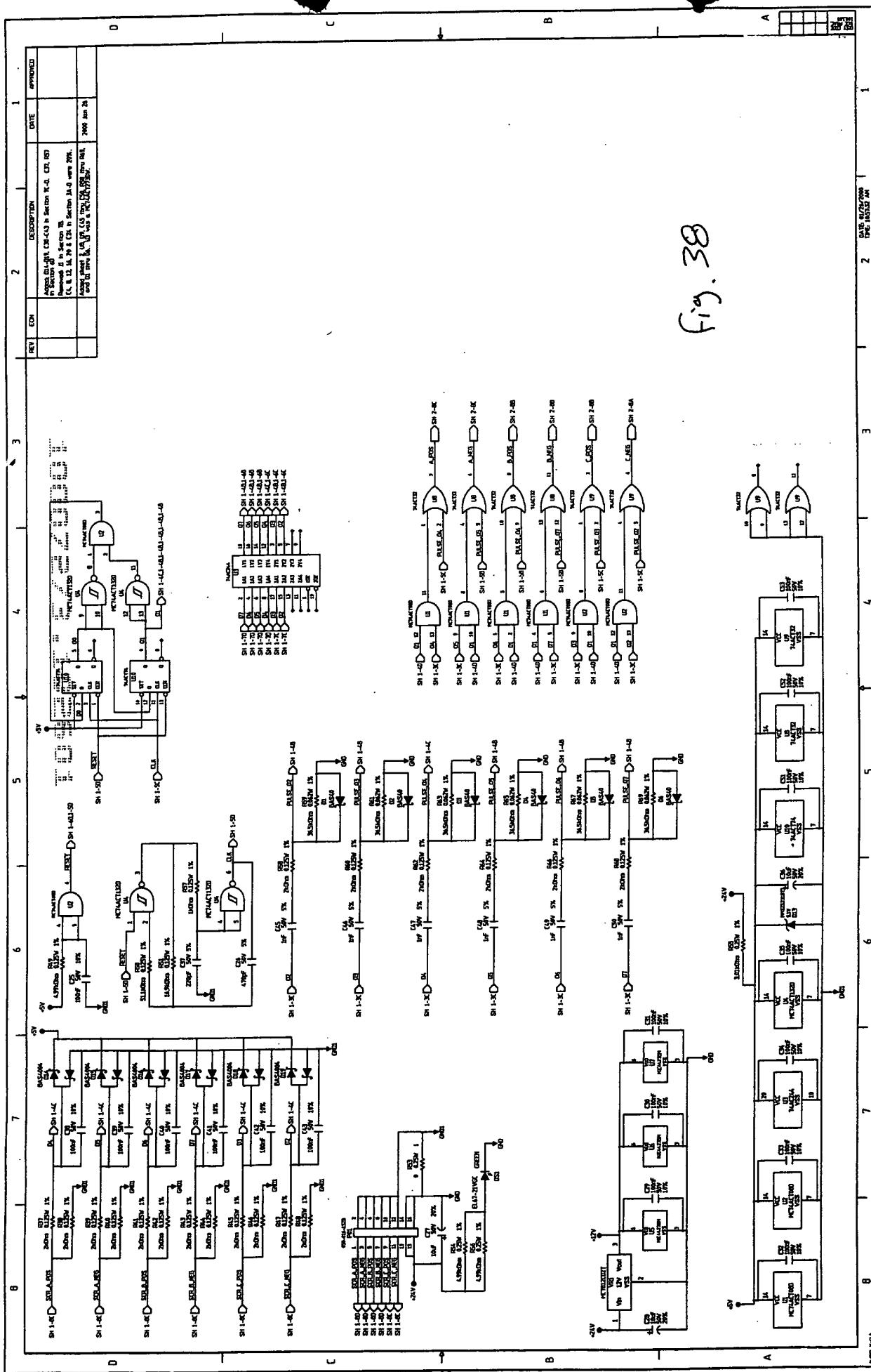


Fig. 37



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